In the Claims:

1. (Previously presented) A wavelength division multiplexing (WDM) method for transmitting information signals via multiple transmission channels, the method comprising:

encoding each information signal with a respective spreading code to generate a coded signal corresponding to each bit of the spreading code, the spreading codes being mutually different;

allocating the coded signals corresponding to the same bit of the spreading codes to a respective one of the transmission channels; and

in each of the transmission channels:

analog summing the coded signals allocated thereto to generate a modulation signal, and

generating an optical transmission signal in response to the modulation signal.

2. (Original) The method of claim 1, in which the spreading codes are mutually orthogonal.

3. (Original) The method of claim 1, in which the spreading codes are mutually quasi-orthogonal.

4. (Original) The method of claim 1, in which the encoding comprises multiplying the information signal by each bit of the respective spreading code to generate the corresponding coded signal.

5. (Original) The method of claim 4, in which the multiplying comprises exclusively-NORing the information signal with the bit of the respective spreading code.

6. (Original) The method of claim 1, in which:

each spreading code comprises bits each in one of a first state and a second state; and

the encoding comprises:

for each bit of the spreading code in the first state, outputting the information signal as the coded signal corresponding to the bit of the spreading code, and

for each bit of the spreading code in the second state, inverting the information signal and outputting the inverted information signal as the coded signal corresponding to the bit of the spreading code.

7. (Withdrawn) A method for recovering information signals from channel signals received via respective transmission channels, the channel signals resulting from encoding the information signals with respective spreading codes, the method comprising, for each of the information signals:

multiplying the channel signal from each of the transmission channels by a respective bit of the spreading code assigned to the information signal to generate a respective product signal;

analog summing the product signals to generate a sum signal; and

subjecting the sum signal to thresholding to recover the information signal.

8. (Withdrawn) The method of claim 7, in which the spreading codes assigned to the information signals are mutually orthogonal.

9. (Withdrawn) The method of claim 7, in which the spreading codes assigned to the information signals are mutually quasi-orthogonal.

10. (Withdrawn) The method of claim 7, in which:

each spreading code comprises bits each in one of a first state and a second state; and

the multiplying comprises:

for each bit of the spreading code in the first state, outputting the channel signal as the respective product signal, and

for each bit of the spreading code in the second state, inverting the channel signal and outputting the inverted channel signal as the respective product signal.

11. (Previously presented) A wavelength division multiplexing (WDM) apparatus for transmitting information signals via multiple transmission channels, the apparatus comprising:

for each of the information signals, a spread-spectrum encoder comprising coded signal outputs and operable to encode the information signal with a respective spreading code to provide a coded signal corresponding to each bit of the spreading code at a respective one of the coded signal outputs, the spreading codes being mutually different;

a signal allocator connected to the coded signal outputs of the spread-spectrum encoders, the signal allocator structured to allocate the coded signals corresponding to the same bit of the spreading codes to a respective one of the transmission channels; and

in each of the transmission channels:

an analog summer comprising an output, and inputs connected to the signal allocator to receive therefrom the coded signals allocated to the transmission channel, and

a transmitter comprising a modulation input connected to the output of the analog summer.

12. (Original) The apparatus of claim 11, in which the spreading codes are mutually orthogonal.

13. (Original) The apparatus of claim 11, in which the spreading codes are mutually quasi-orthogonal.

14. (Original) The apparatus of claim 11, in which:

the transmitter additionally comprises an output; and

the apparatus additionally comprises a multiplexer comprising inputs connected to the outputs of the transmitters, and an output coupled to a transmission medium.

15. (Original) The apparatus of claim 11, in which the transmitters are optical transmitters and the transmission medium comprises an optical fiber.

16. (Original) The apparatus of claim 15, in which the transmitters are wireless transmitters.

17. (Original) The apparatus of claim 11, in which the spread-spectrum encoder comprises:

a spreading code source comprising outputs each providing a respective bit of the spreading code; and

for each bit of the spreading code, a multiplier comprising an input connected to receive the information signal, an input connected to a respective one of the outputs of the spreading code source, and an output that provides a respective one of the coded signals.

18. (Original) The apparatus of claim 11, in which the spread-spectrum encoder comprises:

a spreading code source comprising outputs each providing a respective bit of the spreading code; and

for each bit of the spreading code, an exclusive-NOR gate comprising an input connected to receive the information signal, an input connected to a respective one of the outputs of the spreading code source, and an output that provides a respective one of the coded signals.

19. (Original) The apparatus of claim 11, in which:

each spreading code comprises bits each in one of a first state and a second state; and

the spread-spectrum encoder comprises:

for each bit of the spreading code, an information signal input, a coded signal output and a signal path interconnecting the information signal input and the coded signal output, and

for each bit of the spreading code in the second state, an inverter in series with the signal path.

20. (Withdrawn) Apparatus for recovering information signals from channel signals received via respective transmission channels, the channel signals resulting from encoding the information signals with respective spreading codes, the apparatus comprising a spread-spectrum decoder for each information signal, the spread-spectrum decoder comprising:

multiplying means, connected to receive the channel signals from the transmission channels, for multiplying each channel signal by a respective bit of the spreading code assigned to the information signal to generate a respective product signal; and

an analog summer comprising an output, and inputs connected to receive the product signals from the multiplying means; and

a threshold circuit comprising an input connected to the output of the analog summer and additionally comprising an output providing the information signal.

21. (Withdrawn) The apparatus of claim 20, in which the spreading codes are mutually orthogonal.

22. (Withdrawn) The apparatus of claim 20, in which the spreading codes are mutually quasi-orthogonal.

23. (Withdrawn) The apparatus of claim 20, in which:

the spread-spectrum decoder additionally comprises a spreading code source comprising outputs each providing a respective bit of the spreading code; and

the multiplying means comprises a multiplier for each of the transmission channels, the multiplier comprising an input connected to receive the channel signal from the transmission channel, an input connected to a respective one of the outputs of the spreading code source, and an output that provides a respective one of the product signals.

24. (Withdrawn) The apparatus of claim 20, in which:

each spreading code comprises bits each in one of a first state and a second state; and

the multiplying means comprises:

for each bit of the spreading code, a channel signal input connected to receive the channel signal from the transmission channel, a product signal output that provides a respective one of the product signals, and a signal path interconnecting the channel signal input and the product signal output, and

for each bit of the spreading code in the second state, an inverter in series with the signal path.

25. (Withdrawn) The apparatus of claim 20, additionally comprising:

an optical receiver in each of the transmission channels, the optical receiver operable to derive the channel signal for the transmission channel from a single-wavelength optical signal; and

a channel signal distributor connected between the optical receivers and the spread-spectrum decoders.